

Appl. No. 10/034,734
Amdt, dated 3/28/05
Reply to Office Action of 9/28/04

PATENT
Docket: 010161

IN THE TITLE

Please amend the title as follows:

VARIABLE GAIN SELECTION IN DIRECT CONVERSION RECEIVER ARCHITECTURE

IN THE SPECIFICATION

Please amend paragraph [0010] as follows:

[0010] In another aspect, the operating mode of the ~~VGA~~ AGC loop is selected based in part on the operating mode of the DC loop. Since these two loops operate (directly or indirectly) on the same signal components, they interact with one another. Techniques are provided herein for a loop to signal an event that may impact the performance of the other loop, so that the other loop can appropriately handle the event to minimize performance degradation. For example, if the DC loop is operated in an acquisition mode to quickly remove large DC offsets, large DC spikes can be produced that may have various deleterious effects on the AGC loop, then this event is triggered and the AGC loop may then be operated in a low gain mode or frozen altogether to minimize the effects of the DC spikes on the operation of the AGC loop.

Please amend paragraph [1039] as follows:

[1039] DC loop control unit 234a receives the I and Q outputs from summer 232a, determines the DC offsets in these outputs, and provides the coarse DC control to analog circuitry 222 within direct downconverter 120a. DC loop control unit 234b similarly receives the I and Q outputs from summer 232b, determines the DC offsets in these outputs, and provides the DC offset values of DC4I and DC4Q to summer 23[[4]]2b. Each DC loop control unit 234 is implemented with a gain element 236 coupled to an accumulator 238. Gain element 236 multiplies the input I or Q sample with a particular gain (DC gain 1 for unit 234a and DC gain 2 for unit 234b) selected for that loop. Accumulator 238 then accumulates the scaled I or Q sample to provide the DC offset control for that loop.

Please amend paragraph [1042] as follows:

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[1042] An implementation of the DC offset correction for a direct downconversion receiver, such as the one shown in FIG. 1, is described in further detail in U.S. Patent Application Serial No. 10/139,205 [~~Attorney Docket No. 010119~~], entitled "Direct Current Offset Cancellation for Mobile Station Modems Using Direct Downconversion," filed May 2, 2002 ~~xxx~~, which is incorporated herein by reference.